by side reactions, such as hydrogenolysis of the five-member ring, marked by the presence of α-methylnaphthalene in the tail fraction. As a result of the dehydrogenation the yield of 1,4-endomethylene-1,2,3,4-tetrahydronaphthalene was higher than expected. Thus the ratio of the aromatic hydrocarbon to 1,4-endomethylenedecalin was 1:1 and not 1:2. The dehydrogenation of hydrocarbon I in the presence of platinized carbon at 300 °C gives the aromatic hydrocarbon only with 50% yield. Hydrocarbon II was studied under platforming conditions over a 0.5% Pt/Al_2O_3·HF catalyst at 480 °C and under a hydrogen pressure of 20 atm. The reaction product was a hydrocarbon C_{10} to C_{12} mixture in the 155-273 °C boiling range, but secondary processes of dealkylation and isomerization typical for platforming reactions also occur. The experimental data lead to the following conclusions.
1) 1,4-endomethylenetetrahydronaphthalene participates in the reaction of irreversible catalysis under dehydrogenation conditions.
2) 1,4,5,8-diendomethylenedecahydronaphthalene is unstable under platforming conditions and converts to hydrocarbons of the naphthalene and indan series.

S/204/61/001/004/004/005
E075/E185

AUTHORS: Plate, A.F., Belikova, N.A., and Kirichenko, S Ya.

TITLE: Catalytic conversions of 1,4-endomethyleneoctahydronaphthalene and 1,4,5,8-diendomethylenedecalin

PERIODICAL: Neftekhimiya, v.1, no.4, 1961, 494-500

TEXT: The behaviour of 1,4-endomethyleneoctahydronaphthalene (I) and 1,4,5,8-diendomethylenedecalin (II) under heterogeneous catalysis conditions has been studied for the first time at the Moscow State University. Hodrocarbon I was prepared by condensing two parts of cyclopentadiene with one part of ethylene at 200 °C and 35 atm pressure. It was hydrogenated at 20-40 °C in the presence of suspended Ni catalyst to obtain hydrocarbon II. Hydrocarbon I was studied in the presence of a platinized carbon catalyst under conditions of dehydrogenation and irreversible catalysis (Zelinskiy method). Carbon with 8% platinum was used as the catalyst and the hydrocarbon vapours passed over it with space velocity of 0.2 h^{-1} at 205-210 °C. The reaction products yielded 1,4-endomethylene-1,2,3,4-tetrahydronaphthalene and 1,4-endomethylenedecalin; dehydrogenation, however, was hampered

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L 16995-63

S/204/63/003/002/005/006

Synthesis of organic chlorine .....

5

the side chain of two chlorine atoms at a double bond resulted in a 2-3 times decrease of the insecticidal activity of the preparation. An adduct with a spiro atom exhibited hardly any toxicity. "The authors express their deep gratitude to R. A. Shraybman who conducted the physiological tests at the Nauchnyy institut po udobreniyam i insektofungitsidam im. Ya. V. Samoylova (Scientific Institute for Fertilizers and Insectofungicides imeni Ya. V. Samoylov)." The combination scattering spectra were taken in the laboratory of the Komissiya po spektroskopii AN SSSR (Commission for Spectroscopy, Academy of Sciences USSR) by senior scientific worker V. T. Aleksanyan.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: November 15, 1962

Card 2/2

L 16995-63 EWA(b)/EWA(b)/EWT(1)/EWT(m)/BDS Pe-4/Pv-4 RM

S/204/63/003/002/005/006

68

AUTHOR: Plate, A.F. and Shcherbakova, O.A. 63

TITLE: Synthesis of organic chlorine insecticides containing the cyclopropane ring

PERIODICAL: Neftekhimiya, v. 3, no. 2, 1963, 276-279

TEXT: The purpose of this work was to study further the relationship of the insecticidal activity of the condensation products of hexachlorocyclopentadiene (I) and 1, 1-dichloro-2-alkenylcyclopropane to their structure. A number of new compounds based on I were obtained to explain the effect of chlorine atoms in the cyclopropane ring, as well as of the cyclopropane ring itself on physiological activity. A number of derivatives of hexachlorobicyclo-(2,2,1)-heptene containing the cyclopropane ring were synthesized. During the testing for physiological activity it was found that the substitution of the dichlorocyclopropyl substituent by monochlorocyclopropyl group resulted in no decrease of insecticidal activity. The absence of chlorine atoms in the cyclopropane ring or the absence of the cyclopropane ring with the presence in

Card 1/2

PLATE, Al'fred Feliksovich; BYKOV, Georgiy Vladimirovich; EVENTOVA, Mariya Solomonovna; DANILOV, S.N., otv. red.; VOLODINA, Ye.I., red. izd-va; GOLUB', S.P., tekhn. red.

[Vladimir Vasil'evich Markovnikov; story of his life and scientific activity, 1837-1904] Vladimir Vasil'evich Markovnikov; ocherk zhizni i deiatel'nosti, 1837-1904. Moskva, Izd-vo Akad. nauk SSSR, 1962. 149 p. (MIRA 15:3)
(Markovnikov, Vladimir Vasil'evich, 1837-1904)

BYKOV, G.V., kand.khimicheskikh nauk; PLATE, A.F., doktor khimicheskikh nauk

Boris Aleksandrovich Kazanskii; on the seventieth anniversary of his birth. Zhur.VKHO 6 no.4:447-448 '61. (MIRA 14:7)
(Kazanskii, Boris Aleksandrovich, 1891-)

Catalytic conversions . . S/204/61/001/005/001/008
E075/E484

S. Landa and S. Hala are mentioned in the article in connection with their contribution in this field. There are 2 tables and 8 references: 5 Soviet-bloc and 3 non-Soviet-bloc. The references to English language publications read as follows: Ref.4: P. v. Schleyer, J. Amer. Chem. Soc., v.79, 1957, 3292; Ref.5: P. v. Schleyer, M.M.Donaldson, J. Amer. Chem. Soc., v.82, 1960, 4645.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova Kafedra khimii nefti
(Moscow State University imeni M.V.Lomonosov Petrochemistry Department)

SUBMITTED: July 8, 1961

Card 3/3

S/204/61/001/005/001/008
E075/E484

AUTHORS: Plate, A.F., Nikitina, Z.K., Burtseva, T.A.

TITLE: Catalytic conversions of endo-trimethylene-norbornane on alumino-silicate. Formation of adamantane

PERIODICAL: Neftekhimiya, v.1, no.5, 1961, 599-603

TEXT: A laboratory preparation of adamantane from endo-trimethylene-bornornane (fully hydrogenated dimer of cyclopentadiene) (I) was carried out in a quartz tube reactor and in autoclave. In the first method the alumino-silicate catalyst activated by cyclohexane was contacted with (I) for 42 minutes at 400 to 475°C. After distilling off naphthenes and paraffins and separating aromatic hydrocarbons by silica gel from the catalysate, adamantane was isolated from the residue by filtration and recrystallization in 13% yield. In the autoclave method the catalyst and I (1:5) were heated at 350 to 380°C for 6.5 to 16.5 hours giving 9 to 10% adamantane. The results suggest that adamantane was formed in crude oils by isomerization of naturally occurring terpene compounds under the action of natural alumino-silicates. Although adamantane is the main product of the

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Production of 2,3,6,7-dioxide...

B127/B110

The yield was 50 %. The monomer forms white crystals, melting point 179.5°C. It is a byproduct of the manufacture of the insecticide "aldrin". The analysis of the C- and H content corresponded to the formula $C_{12}H_{14}O_2$. The infrared spectrum of the dioxide shows an intensive line at 847 cm^{-1} which belongs to the C-O group in the epoxy group. The disappearance of the line at 1570 cm^{-1}, which corresponds to the C=C double bond, proves completeness of resinification. The absence of the line in the range 3200-3600 cm^{-1}, characteristic of hydroxyl groups, confirms the purity of the product obtained. There are 1 figure and 5 references: 3 Soviet and 2 non-Soviet. The reference to the English-language publication reads as follows: O. D. Shreve, M. R. Heether, H. B. Knight, D. Swern, Anal. Chem., 23, 277 (1951).

Card 2/2

PLATE A.F.

3128
S/191/62/000/002/003/003
B127/B110

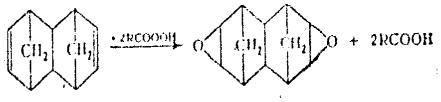
15 8121 1407

AUTHORS: Gosteva, O. K., Libina, S. L., Fryanishnikova, M. A., Akutin, M. S., Plate, A. F.

TITLE: Production of 2,3,6,7-dioxide of 1,4,5,8-di-endomethylene-1,4,4a,5,8,8a-hexahydro naphthalene

PERIODICAL: Plasticheskiye massy, no. 2, 1962, 55

TEXT: According to J. A. Trigeux (Modern Plastics, 38, no. 1, 147 (1960)), specially heat-resistant epoxy resins are obtained on the basis of dicyclopentadiene. In the present study, 1,4,5,8-diendomethylene-1,4,4a,5,8,8a-hexahydronaphthalene developing from bicyclo-(2,2,1)-heptadiene-2,5 and cyclopentadiene was investigated. In the epoxy resinification of diendomethylene hexahydro naphthalene with monoperphthalic acid in ether at 30°C, a hitherto unknown dioxide was obtained:



II III

Card 1/2

GOSTUNSKAYA, I.V.; PLATE, A.F.; KHROMOV, S.I.

Reactions of hydrogenation and dehydrogenation of hydrocarbons in works of the Academician B.A. Kazanskii. Vest.Mosk.un.Ser.2:khim. 16 no.3:63-68 My-Je '61. (MIRA 14:10)

1. Kafedra khimii nefti Moskovskogo gosudarstvennogo universiteta.

(Kazanskii, Boris Aleksandrovich, 1894-)
(Hydrogenation)

PLATE, A.F.; NIKITINA, Z.K.; BURTSEVA, T.A.

Conversions of endo-trimethylenenorbornane on an aluminosilicate catalyst. Formation of adamantane. Neftekhimiia 1 no.5:599-603 S-O '61. (MIRA 15:2)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova, kafedra khimii nefti.
(Petroleum--Analysis)(Norbornane)(Adamantane)

PLATE, A.F.

N.D. Zelinskii and his contribution to the chemistry of hydrocarbons; on the centenary of his birth. Vop.ist.est. i tekh. no.11:3-10 '61. (MIRA 14:11)
(Zelinskii, Nikolai Dmitrievich, 1861-1953)
(Hydrocarbons)

TARASOVA, G.A.; PLATE, A.F.; MEL'NIKOV, N.N.; VOL'FSON, L.G.; TISHCHENKO, A.I.

Condensation of polychlorocyclopentadiences with acetylene.
Neftekhimiia 1 no.1:65-69 Ja-F '61. (MIRA 15:2)

1. Institut organicheskoy khimii AN SSSR imeni N.D.Zelinskogo.
(Condensation products (Chemistry))

PLATE, A.F.

The 100th anniversary of the birth of N.D.Zelinskii. Vop.ist.-est.i tekh. no.12:233-234 '62. (MIRA 15:4)
(Zelinskii, Nikolai Dmitrievich, 1861-1953)

VDOVIN, V.M.; PUSHCHEVAYA, K.S.; BELIKOVA, N.A.; SULTANOV, R.; PLATE, A.F.; PETROV, A.D.

Silane derivatives with hydrocarbon bridges between silicon atoms. Polymerization of 1, 1-dimethylsilicacyclopentane. Dokl.AN SSSR 136 no.1:96-99 Ja '61. (MIRA 14:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
2. Chlen-korrespondnet AN SSSR (for Petrov).
(Silicon organic compounds) (Polymerization)

PLATE, A.F.; STANKO, V.I.

Hydrogenation of di-(Δ^{2}-cyclopentenyl)acetylene of Pd Pt, and Ni catalysts. Izv.AN SSSR Otd.khim.nauk no.8:1481-1489 Ag '60. (MIRA 15:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Acetylene) (Hydrogenation) (Catalysts)

GOSTEVA, O.K.; LIBINA, S.L.; PRYANISHNIKOVA, M.A.; AKUTIN, M.S.; PLATE, A.F.

Production of 2, 3, 6, 7-dioxide of 1, 4, 5, 8-diendomethylene-1, 4, 4a, 5, 8, 8a-hexahydronaphthalene. Plast.massy no.2:55 '62. (MIRA 15:2)

(Endomethylenenaphthalene) (Epoxy resins)

PLATE, A.F.; KIKOT', G.S.

Homogeneous destructive hydrogenation of p-(α,α-dimethylbenzyl) phenol. Zhur.ob.khim. 32 no.6:1828-1831 Je '62. (MIRA 15:6)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Phenol) (Hydrogenation)

PLATE, A.F.

N.D.Zelinskii and present-day developments of petrochemistry; on the 100th anniversary of his birth. Neftekhimiia 1 no.1:7-14 Ja-F '61. (MIRA 15:2)
(Zelinskii, Nikolai Dmitrievich, 1861-1953)
(Petroleum chemicals)

VOL'FSON, L.G.; MEL'NIKOV, N.N.; PLATE, A.F.; TARASOVA, G.A.; PERSON, A.I.; PLETNEVA, L.S.

Preparation of isodrin and endrin. [Trudy] NIUIF no.171: 52-60 '61. (MIRA 15:7)
(Isodrin) (Endrin)

SEREGIN, E.A.; KOLESOV, V.P.; BELIKOVA, N.A.; SKURATOV, S.M.; PLATE, A.F.

Heat capacity at low temperatures and thermodynamic functions of endo- and exo-2-cyano-bicyclo-(2,2,1)-heptane. Dokl.AN SSSR 145 no.3:580-583 Jl '62. (MIRA 15:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova. Predstavleno akademikom B.A.Kazanskim.
(Bicycloheptane) (Heat capacity)

BELIKOVA, N.A.; KARGIN, V.A.; PLATE, A.F.; PLATE, N.A.; TAYTS, G.S.; LYAMINA, I.N.

Synthesis and polymerization of 2-vinylbicyclo-(2,2,1)-heptane. Neftekhimiia 1 no.2:218-223 Mr-Ap '61. (MIRA 15:2)

1. Moskovskiy gosudarstvennyy universitet im. Lomonosova i Institut organicheskoy khimii AN SSSR im. N.D. Zelinskogo.
(Norbornane) (Polymerization)

BELIKOVA, N.A.; BEREZKIN, V.G.; PLATE, A.F.

Synthesis of endo- and exo-2-methylbicyclo [2,2,1] heptanes. Steric directivity of the reaction of cyclopentadiene with propylene. Zhur.ob.khim. 32 no.9:2942-2951 S '62. (MIRA 15:9)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova i Institut neftekhimicheskogo sinteza AN SSSR.
(Cyclopentadiene) (Propene) (Bicycloheptane)

MIL'VITSKAYA, Ye.M.; PLATE, A.F.

Structural isomerism of cychloheptatriene under conditions of the Diels-Adler reaction. Zhur.ob.khim. 32 no.8:2566-2576 Ag '62. (MIRA 15:9)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Cycloheptatriene) (Isomerism)

PLATE, A.F.; SHCHERBAKOVA, O.A.

Some derivatives of bicyclo-(2,2,1)-heptane with a dichlorocyclopropyl group. Neftekhimiia 3 no.1:35-39 Ja-F '63. (MIRA 16:2)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Bicycloheptane)
(Cyclopropyl group)

PLATE, A.F.; MIL'VITSKAYA, Ye.M.

Isomerization of hydrocarbons of the bicyclo-(2,2,1)-heptene series in the presence of silica gel. Neftekhimiia 3 no.1:40-47 Ja-F '63. (MIRA 16:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Bicycloheptene) (Isomerization)
(Silica)

VOL'FSON, L.G.; MEL'NIKOV, N.N.; PLATE, A.F.; PEREL'MUTER, P.M.; VOLODKOVICH, S.D.; PRYANISHNIKOVA, M.A.; LEBEDEVA, K.V.; VOLOSHKEVICH, N.P.

Continuous method for the preparation of aldrin. Khim.prom. no.10:714-717 O '62. (MIRA 15:12)

(Aldrin)

PIATE, A.F.; SHCHERBAKOVA, O.A.

Synthesis of chloroorganic insecticides containing a cyclopropane ring. Neftekhimiia 3 no.2:276-279 Mr-Ap '63. (MIRA 16:5)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Insecticides) (Chlorine organic compounds) (Cyclopropane)

MIL'VITSKAYA, Ye.M.; PLATE, A.F.

Isomerization in the presence of silica gel of some bi- and tricyclic hydrocarbons containing a three-membered cycle. Neftekhimiia 3 no.2:188-197 Mr-Ap '63. (MIRA 16:5)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Hydrocarbons) (Cyclic compounds) (Isomerization)

ANIKIN, Aleksey Gerasimovich; DUGACHEVA, Galina Mikhaylovna; GERASIMOV, Ya.I., prof., otv. red.; PLATE, A.F., prof., otv. red.; KORDETSOVA, N.A., red.; YERMAKOV, M.S., tekhn. red.

[Determination of the purity of organic substances] Opredelenie chistoty organicheskikh veshchestv. Otv. red. IA.I. Gerasimov, A.F.Plate. Moskva, Izd-vo Mosk. univ. 1963. 147 p. (MIRA 16:10)

1. Chlen-korrespondent AN SSSR (for Gerasimov).
(Organic compounds) (Chemistry, Analytical)

POLYAKOVA, A.M.; PLATE, A.F.; PRYANISHNIKOVA, M.A.; LIPATNIKOV, N.A.

Investigation of the polymerization of some unsaturated cyclic hydrocarbons under pressure: bicyclo-(2,2,1)-heptene-2, bicyclo-(2,2,1)-heptadiene-2,5 and cycloheptatriene. Neftekhimiia 1 no.4:521-526 Jl-Ag '61. (MIRA 16:11)

1. Institut elekentsorganicheskikh soyedineniy AN SSSR i Institut organicheskoy khimii AN SSSR imeni N.D. Zelinskogo.

PLATE, A.F.; BELIKOVA, N.A.; KIRICHENKO, S.Ya.

Catalytic conversions of 1,4-endomethyleneoctahydronaphthalene and 1,4,5,8-diendomethylenedecalin. Neftekhimiia 1 no.4:494-500 Jl-Ag '61. (MIRA 16:11)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, kafedra khimii nefti.

BELIKOVA, N.A.; PLATE, A.F.; STERIN, Kh.Ye.

Isomerization of endo- and exo-2-methylbicyclo[2,2,1]heptanes in the presence of concentrated sulfuric acid. Zhur.ob.khim. 34 no.1:126-132 Ja '64. (MIRA 17:3)

1. Moskovskiy gosudarstvennyy universitet i Komissiya po spektroskopii AN SSSR.

ALEKSANYAN, V.T.; SHCHERBAKOVA, O.A.; PLATE, A.F.

Raman spectra of alkyl and alkenyl derivatives of i,i-dichlorocyclopropane. Dokl. AN SSSR 152 no.3:602-605 S '63. (MIRA 16:12)

1. Komissiya po spektroskopii AN SSSR i Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom B.A. Kazanskim.

L 15702-65

ACCESSION NR: AP4044076

crystals". The enthalpy for the exo-isomer, calculated at initial bomb pressure of 1 atm, $-\Delta H_c^{306}$ = 1132.44 ± 0.31 kcal/mol, and for the endo- isomer, $-\Delta H_c^{25^\circ}$ = 1132.98 ± 0.35 kcal/mol. The heat of isomerization was calculated at 76.80, at which temperature both isomers were liquid. $\Delta H_{c\,exo}^{76.8^\circ}$ = 1130.09 ± 0.31 and $\Delta H_{c\,endo}^{76.8^\circ}$ = 1131.05 ± 0.35 kcal/mol; exo--endo heat of isomerization = -0.96 ± 0.44 kcal/mol. Orig. art. has: 3 tables.

ASSOCIATION: MGU Kafedra fizicheskoy khimii (Moscow State University Department of Physical Chemistry)

SUBMITTED: 03Mar64 DATE ACQ: ENCL: 00

SUB CODE: TD, GC NR REF SOV: 004 OTHER: 004

Card 2/2

L 15702-65 EPA/EPA(a)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Paa-4/Pr-4/
Ps-4/Pt-10/Pi-4 AEDC/ASD-3/AFFTC/SSD/AFGC/RPL/AEDC(a)/AFWL/ASD(p)-3
BW/WW/JW/JWD/WE/RM

B

ACCESSION NR: AP4044076 S/0189/64/000/004/0003/0006

AUTHORS: Goroshko, N.M. Kozina, M.P.; Skurstov, S.M.; Belikova, N.A.; Plate, A.F.

TITLE: Heats of combustion of exo-and endo-isomers-- 2-cyano-bicyclo-(2,2,1)heptane

SOURCE: Moscow.Universitet. Vestnik. Seriya. Khimiya, no. 4, 1964, 3-6

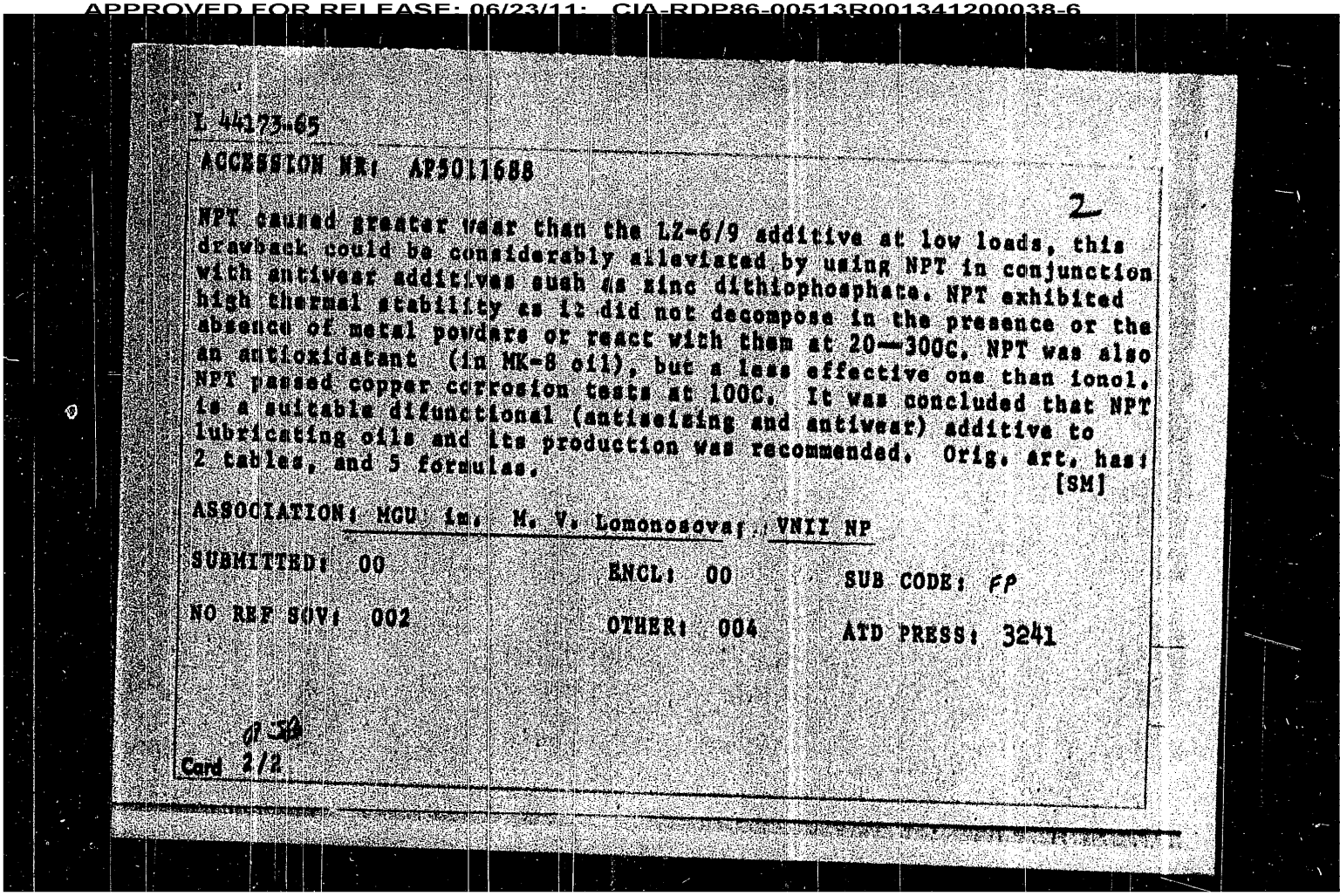
TOPIC TAGS: bicycloheptane derivative, cyano bicyclo heptane, endo isomer, exo isomer, heat of combustion, heat of isomerization, enthalpy, plastic crystal

ABSTRACT: The heats of combustion of the exo and endo isomers and the heat of isomerization ($\Delta H_{exo \rightarrow endo}$) of 2-cyano-bicyclo-(2,2,1)-heptane were determined in the Moscow State Universeity Thermochemical Laboratory (v termokhimicheskoy laboratorii MGU) study of the thermodynamic properties of bicyclo-(2,2,1)heptane derivatives, of interest because of their high symmetry suitable for forming "plastic

Card 1/2

SEREGIN, E.A.; GOROSHKO, N.N.; KOLESOV, V.P.; BELIKOVA, N.A.; SKURATOV, S.M.; PLATE, A.F.

Heat capacity at low temperatures and the thermodynamic functions of endo- and exo-2-methyl-bicyclo-(2,2,1)-heptanes. Dokl. AN SSSR 159 no.6:1381-1384 D '64 (MIRA 18:1)



L 44173-65

ACCESSION NR: AP5011688

2

NPT caused greater wear than the LZ-6/9 additive at low loads, this drawback could be considerably alleviated by using NPT in conjunction with antiwear additives such as zinc dithiophosphate. NPT exhibited high thermal stability as it did not decompose in the presence or the absence of metal powders or react with them at 20—300C. NPT was also an antioxidatant (in MK-8 oil), but a less effective one than ionol. NPT passed copper corrosion tests at 100C. It was concluded that NPT is a suitable difunctional (antiseizing and antiwear) additive to lubricating oils and its production was recommended. Orig. art. has: 2 tables, and 5 formulas. [SM]

ASSOCIATION: MGU im. M. V. Lomonosova; VNII NP

SUBMITTED: 00 ENCL: 00 SUB CODE: FP

NO REF SOV: 002 OTHER: 004 ATD PRESS: 3241

07 30

Card 2/2

L 41127-65 EPF(c)/EWP(m)/T Pr-4 DJ

ACCESSION NR: AP5011688 UR/0065/65/000/005/0034/0036

AUTHOR: Burtseva, T. A.; Vinogradova, I. E.; Plate, A. F.; Danilova, T. A.

TITLE: Dithia-thiones: sulfur-containing additives to lubricating oils

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 5, 1965, 34-36

TOPIC TAGS: diathiacyclopentenethione, additive, lubricating oil, EP agent, antiwear agent/NPT

ABSTRACT: Two 4,5-dithiacyclo-2-pentenethiones with different substituents have been synthesized and tested as lubricating oil additives. The first, 2,3-dimethyl-4,5-dithiacyclo-2-pentenethione proved to have good antiseizing [EP] properties but also to be poorly soluble in petroleum oils. The second, 2-neopentyl-3-tert-butyl-4,5-dithiacyclo-2-pentenethione, designated NPT, was prepared from triisobutylene, sulfur, and quinoline activator at 177C in 74% yield based on charged sulfur. Tests in T6-14.5 oil showed that NPT is one of the most effective antiseizing sulfur-containing additives ever tested. While

Card 1/2

FREYDLIN, L.Kh.; PLATE, A.F.; ZHUKOVA, I.F.; BELIKOVA, N.A.

Order of the addition of hydrogen to double bonds of 4-vinylcyclohexane-1 on Pt- and Ni-catalysts. Neftekhimia 4 no.3:382-385 My-Je '64. (MIRA 18:2)

1. Institut organicheskoy khimii AN SSSR im. N.L.Zelinskogo i Moskovskiy gosudarstvennyy universitet.

[illegible], A.F.; [illegible], N.A.: [illegible], ..A.; [illegible], N.[illegible]; [illegible], .V.

Intercalation of [illegible] Cobalt [illegible] in the case of $AlCl_3$. Dokl. [illegible] 3 no.[illegible] [illegible] '56.

(MIRA 10:8)

1. Moskovskiy gosudarstvennyy universitet i Institut elementoorganicheskikh soyedineniy AN SSSR. Submitted January 16, 1956.

KHALIL', F.G.; [illegible], [illegible]; [illegible], [illegible]; [illegible]

Catalytic cracking of di-n-nonyl sulfide in the individual state and in a cetane solution on aluminosilicate catalysts. Vest. Mosk. un. Ser. 2: Khim. 19 no.[illegible] '64. (MIRA 18:3)

1. Kafedra khimii nefti Moskovskogo universiteta.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001341200038-6

L 51812-65

ACCESSION NR: AP5017011

ring occurred to an extent of only 14% at 350°. In the absence of a catalyst, pyrolysis does not begin at temperatures below 450°; at 500°, bicyclo-(3,2,0)-heptane is 15% decomposed, while at 550° the decomposition goes to completion. The pyrolysis products at 500°, after hydrogenation, contained the initial hydrocarbon, 6-7% cyclopentane, and 7-8% n-heptane. The pyrolyzate obtained at 550° represented a complex mixture: after hydrogenation, n-pentane, isopentane, cyclopentane, n-heptane, trans-1,2-dimethylcycloheptane, ethylcyclopentane, a few aromatic compounds, and the initial bicyclo-(3,2,0)-heptane were found; the gas formed in the decomposition contained 80% ethylene and an admixture of methane and hydrogen. Orig. art. has: 2 formulas, 3 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University); Komissiya po spektroskopii AN SSSR (Spectroscopy Commission, AN SSSR)

SUBMITTED: 12Jun64 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 006 OTHER: 002 JPRS

Card 2/2

L 51812-65 EWT(m)/EPF(c)/EWP/EWT(j)/T/ Pc-4/Pr-4/Ps-4 WW/RM

ACCESSION NR: AP5017011 UR/0204/64/004/006/0819/0823

34
19
B

AUTHOR: Plate, A. F.; Gusar', N. I.; Belikova, N. A.; Sterin, Kh. Ye.

TITLE: Hydrogenolysis and pyrolysis of bicyclo-(3,2,0)-heptane

SOURCE: Neftekhimiya, v. 4, no. 6, 1964, 819-823

TOPIC TAGS: heptane, hydrogenation, pyrolysis, catalysis, cyclic group

ABSTRACT: Hydrogenolysis of bicyclo-(3,2,0)-heptane on platinized charcoal begins at 100° and goes almost to completion at 150°, forming ethylcyclopentane (49%), cycloheptane (44%), and trans-1,2-dimethylcyclopentane (7%). In the presence of nickel-on-kieselguhr, complete hydrogenolysis of bicyclo-(3,2,0)-heptane takes place at 110°, resulting in the formation of ethylcyclopentane (50%), cyclopentane (20%), and trans-1,2-dimethyl-cyclopentane (28%). The carrier, kieselguhr, does not catalyze the conversion of bicyclo-(3,2,0)-heptane. Formation of the trans-isomer of 1,2-dimethylcyclopentane was explained by conversion of the cis-isomer originally formed, at the reaction temperature. In a study of the behavior of bicyclo-(3,2,0)-heptane under conditions of catalytic isomerization on platinized charcoal (in the absence of hydrogen), the hydrocarbon remained stable up to 250°, and cleavage of the cyclobutane

Card 1/2

BELIKOVA, N.A.; PLATE, A.F.; PAVLOVA, G.K.; STERIN, Kh.Ye.; LUKASHOVA, V.V.; PAKHOMOV, V.P.; BORESKOV, V.G.

Isomeric transformations of unsaturated hydrocarbons of the bicyclo (2,2,1) heptane series in the presence of sulfuric acid and an aluminochromium catalyst. Zhur.org.khim. 1 no.3:556-563 Mr '65. (MIRA 18:4)

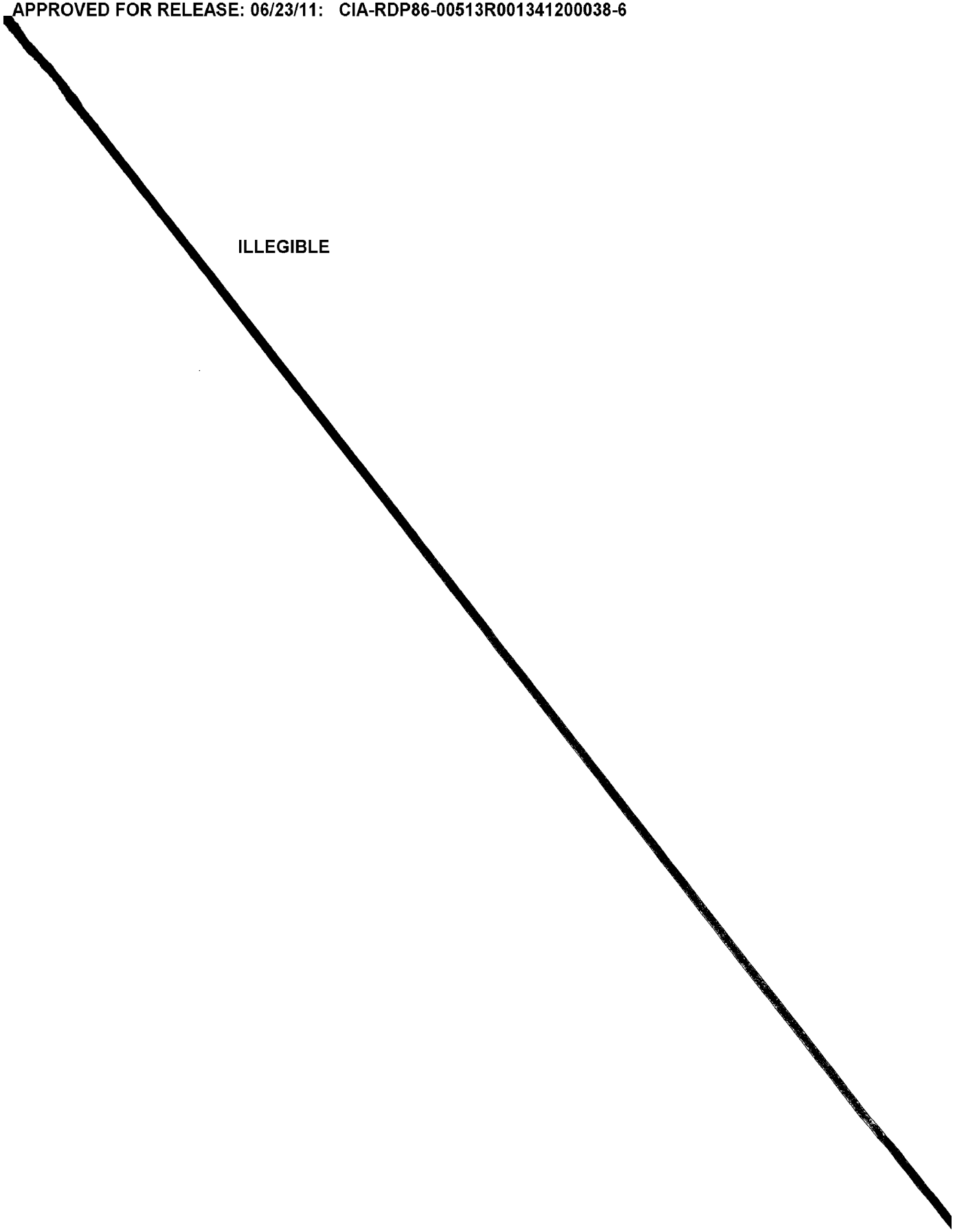
1. Moskovskiy gosudarstvennyy universitet, Institut neftekhimicheskogo sinteza im. N.D.Zelinskogo i Komissiya po spektroskopii AN SSSR.

BELIKOVA, N.A.; LEBEDEVA, K.V.; MEL'NIKOV, N.N.; PLATE, A.F.

Organic fungicides. Part 21. Oxidation of some cyclic compounds by hydrogen peroxide. Zhur. ob. khim. 35 no.10: 1746-1752 O '65. (MIRA 18:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy.

ILLEGIBLE



GOLOVKIN, G.V.; PRYANISHNIKOVA, M.A.; KONONOV, N.F.; PLATE, A.F.; [illegible], V.V.

Preparation of bicyclo[3,2,1]octa-2,5-diene; effect of the nature of [illegible]matizer, temperature, pressure, and cyclopentadiene feed rate. Izv. AN SSSR.Ser.khim. no.10:1850-1855 '65.

(MIRA 18:10)

1. Institut organicheskoy khimii im. N.I.Zelinskogo AN SSSR.

PLATE, A.F.; PRYANISHNIKOVA, M.A.

Synthesis and properties of bicyclo[2,2,1]-2,5-heptadione, an intermediate product for the preparation of the insecticides aldrin and dildrin. Zhur.prikl.khim. 38 no.9:2072-2078 S '65. (MIRA 18:11)

L 9427-66

ACC NR: AP5027728

in monocyclic containing the same number of carbon atoms; 6) water solubility in naphthenic hydrocarbons and paraffins also decreases with an increase in molecular weight but to a lesser degree than in aromatic hydrocarbons; 7) water solubility in paraffins increases with an increase in branching; 8) at the same molecular weight all six-member naphthenic hydrocarbons dissolve less water than the five-member hydrocarbons; 9) naphthenic hydrocarbons with alkyl groups of normal structure as side chains are capable of dissolving more water than normal paraffins of corresponding molecular weight; 10) bicyclic naphthenic hydrocarbons dissolve considerably less water than monocyclic hydrocarbons with the same number of carbon atoms; 11) unsaturated hydrocarbons are capable of dissolving more water than naphthenic hydrocarbons and paraffins of corresponding structure, but water solubility in unsaturated hydrocarbons is lower than in aromatic hydrocarbons differing in this respect with data by J.W. Gibbs. Collected Work. New York, 1931 and C. Black et al. J. Chem. Phys., v. 16, no. 5, 1943; and 12) bicyclo [2.2.1] heptadiene dissolves less water than its isomeric toluene but more than methyl cyclohexane having the same number of carbon atoms; the same is true of 1,4,5,8 - Bisendomethylene - 1,4,4a,5,8,8a - hexahydronaphthalene. It is noted that the water solubility in cycloheptatrien is greater than even in toluene. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: FP, GC

NO REF SOV: 009 OTHER: 004

Card 2/2

L 9427-66 EWT(m)/EWP(j) RM

ACC NR: AP5027728 UR/0065/65/000/009/0042/0046
66.061.5 4

AUTHOR: Englin, B.A.; Plate, A.F.; Tugolukov, V.M.; Pryanishnikova, M.A.

TITLE: Water solubility in individual hydrocarbons

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 9, 1965, 42-46

TOPIC TAGS: solubility, water, hydrocarbon, aromatic hydrocarbon, alkyl radical, atomic structure, molecular weight, carbon, fuel, aviation gasoline, ice, crystal, solvent action, organic solvent, solution concentration

ABSTRACT: This research was carried out because the available data on water solubility is confined to a limited number of hydrocarbons and are frequently inconsistent. The experiments were carried out with 61 hydrocarbons of different classes at various temperatures. The experimental results show that 1) water solubility in hydrocarbons is greatly affected by the hydrocarbon structure; 2) water solubility is highest in aromatic hydrocarbons, particularly in benzene; 3) water solubility in aromatic hydrocarbons is mainly conditioned by the molecular weight and side-chain branching of the hydrocarbons, decreasing more drastically with increase in molecular weight and less drastically with side-chain branching; 4) substitution of a five-member cycloalkyl radical for an alkyl radical in the aromatic ring has no substantial effect on the water solubility; 5) water solubility in bicyclic aromatic hydrocarbons is higher than

Card 1/2

PLATE, A.F., prof.

Marija Benediktovna Turova-Poliak, 1899-1965; obituary. Vest. Mosk. un. Ser. 2:Khim. 20 no. 5:93-94 S-O '65. (MIRA 18:12)

L 41276-66
ACC NR: AP5025124

α-hydroxy substitution was produced if such compounds had sufficient stability under reaction conditions, glycols or monoacetates of the latter being otherwise obtained. Unsaturation in side chains gave mainly glycols or acetates, and oxidation in tert.-butyl alcohol gave α-hydroxy compounds or glycols. Orig. art. has: 2 tables.

SUB CODE: 06/ 07/ SUBM DATE: 08Jun64/—Oct65/ ORIG REF: 018/ OTH REF: 016

Card 2/2 LC

L 42[illegible]-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP5025124 SOURCE CODE: UR/0079/65/035/010/1746/1752

AUTHOR: Belikova, N. A.; Lebedeva, K. V.; Mel'nikov, N. N.; Plate, A. F.

ORG: All-Union Scientific Research Institute of Chemical Means for Plant Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskiky sredstv zashchity rasteniy)

TITLE: From the field of organic insecticides-fungicides. LXXXIII. Oxidation of some cyclic compounds with hydrogen peroxide

SOURCE: Zhurnal obshchey khimii, v. 35, no. 10, 1965, 1746-1752

TOPIC TAGS: cyclic compound, hydrogen peroxide, oxidation, chemical synthesis, insecticide, fungicide

ABSTRACT: Unsaturated cyclic compounds, including bridged and fused hydrocarbons, chlorohydrocarbons, aldehydes, esters, alcohols and nitriles with unsaturation in ring or side chains were oxidized with hydrogen peroxide to study possibly convenient routes for synthesis of α-hydroxy compounds and particularly of such compounds with potential insecticide-activity, replacing methods which apply unstable and explosive peroxy-acids. The compounds were treated at 40—100C 2—6 hr with 2—3 or 1—2 mole H_2O_2/mole starting compound in glacial acetic acid or tert.-butyl alcohol, respectively. In glacial acetic acid,

Card 1/2 UDC: 542.955.2:547.5

88571

S/020/61/136/001/015/037
B016/B055

5.3700

AUTHORS: Vdovin, V. M., Puchcheveva, K. S., Belikova, N. A., Sultanov, R., Plate, A. F., and Petrov, A. D., Corresponding Member AS USSR

TITLE: Derivatives of Silanes With Hydrocarbon Bridges Between the Si Atoms. The Polymerization of 1,1-Dimethyl Silicocyclopentane

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 1, pp. 95-99

TEXT: The authors studied the effect of aluminum halides ($AlCl_3$ and $AlBr_3$ on 1,1-dimethyl silicocyclopentane. They regard the latter as a bridge compound in which both ends of the organic radical -R- are attached to the same silicon atom. Experimental results confirmed the authors assumption that, under the influence of AlX_3, the $\equiv Si - (CH_2)_4$ bonds would be more reactive than the $\equiv Si - CH_3$ bonds. As expected, this lead to formation of a reactive radical $-Si(CH_3)_2CH_2CH_2CH_2CH_2-$, and in the presence

Card 1/3

of $AlCl_3$ or $AlBr_3$ to a specific polymerization reaction (A):

$$(CH_3)_2Si(CH_2)_4 \xrightarrow{Al_2X_6} \left[(CH_3)_2Si(CH_2)_4\right]\cdot Al_2X_6 \longrightarrow$$

$$\longrightarrow \left[-(CH_3)_2Si(CH_2)_4-\right]\cdot Al_2X_6 \longrightarrow -\left[Si(CH_3)_2CH_2CH_2CH_2CH_2\right]_n - \cdot Al_2X_6 \quad (A)$$

This reaction is very rapid if the silane and the catalyst are heated for a short time. The authors verified the structure of this product by synthesizing it from corresponding fragments (B). Infrared spectroscopy proved these two products to be identical. Differences between the spectra of these two polymers and that of the monomer are explained by the spatial position of the carbon chains (isomerism). The authors thank Yu. F. Yegorov and Ye. D. Lubush for performing the spectroscopic analyses. Finally the authors discuss the polycondensation of 1,4-dibromethyl disilyl butane. The reaction product was a colorless, rubbery insoluble polymer similar to the polymerization product obtained in reaction (A). There are 1 figure and 6 Soviet references.

Card 2/3

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: October 1, 1960

Card 3/3

PETROV, A.D.; PLATE, A.F.; CHERNYSHEV, Ye.A.; DOLGAYA, M. Ye.; BELIKOVA, N.A.; KRASNOVA, T.L.; LEYTES, L.A.; PRYANISHNIKOVA, M.A.; TAYTS, G.S.; KOZYRKIN, B.I.

Preparation of organosilicon derivatives of bicyclo [2.2.1] heptane. Zhur. ob. khim. 31 no.4:1199-1208 Ap '61. (MIRA 14:4)

1. Institut organicheskoy khimii Akademii nauk SSSR.
(Bicycloheptane) (Silicon organic compounds)

88480

Condensation of Cyclopentadiene With Aliphatic Dienes. III. Isomerization of 2-Vinyl- and 2-Isopropenyl-bicyclo-(2,2,1)-heptene-5 to the System of 4,9,7,8-Tetrahydroindene

S/079/61/031/001/012/025
B001/B066

butadiene. I. L. Safonova is mentioned. There are 20 references: 6 Soviet, 11 US, 3 German, 1 Swedish, and 2 British.

ASSOCIATION: Institut organicheskoy khimii Akademii nauk SSSR (Institute of Organic Chemistry of the Academy of Sciences USSR)

SUBMITTED: February 21, 1960

Card 3/3

88480

Condensation of Cyclopentadiene With Aliphatic Dienes. III. Isomerization of 2-Vinyl- and 2-Isopropenyl-bicyclo-(2,2,1)-heptene-5 to the System of 4,9,7,8-Tetrahydroindene

S/079/61/031/001/018/035
B001/B064

diene and isoprene (13, 14). Further evidence was given by the formation of indane on dehydrogenation of tetrahydroindene, and of methyl indane on dehydrogenation of isopropenyl-bicycloheptene-5. Different possible ways of isomerizing vinyl- and isopropenyl-bicycloheptenes to tetrahydroindene are discussed. The formation of the same 5-methyl-tetrahydroindene by condensation of cyclopentadiene with isoprene and by isomerization of 2-isopropenyl-bicycloheptene-5 suggests that both condensation and isomerization proceed via a common intermediate. The C-C bond is cleft according to O. Schmidt's rule, and the biradical A is isomerized to the biradical B, and then stabilized. A rise of the reaction temperature increases the tetrahydroindene yield on condensation of cyclopentadiene with butadiene, and, in turn, decreases the yield of vinyl bicycloheptene (Refs. 1, 3). This fact is due to the capability of the latter to isomerize to tetrahydroindene. It may be seen from a comparison of the tetrahydroindene yields obtained in the isomerization of vinyl bicycloheptene with the yields in the synthesis, that a certain part of tetrahydroindene appears as the primary product in the reaction of cyclopentadiene with

Card 2/3

88480

S/079/61/031/001/012/025
B001/B066

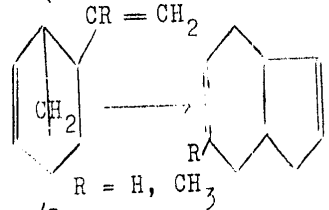
5.3832 2209

AUTHORS: Plate, A. F. and Belikova, N. A.

TITLE: Condensation of Cyclopentadiene With Aliphatic Dienes. III. Isomerization of 2-Vinyl- and 2-Isopropenyl-bicyclo-(2,2,1)-heptene-5 to the System of 4,9,7,8-Tetrahydroindene

PERIODICAL: Zhurnal obshchey khimii, 1961, Vol. 31, No. 1, pp. 131 - 136

TEXT: Taking Refs. 1 - 12 into account, the authors studied the thermal stability of 2-vinyl- and 2-isopropenyl-bicyclo-(2,2,1)-heptene-5 synthesized by them (Refs. 13 and 14). These compounds were found to have the specific property of isomerizing on being heated to 4,9,7,8-tetrahydroindene (Ref. 15) and, respectively, to 5-methyl-4,9,7,8-tetrahydroindene:



These isomerizations to tetrahydroindene and 5-methyl-tetrahydroindene were confirmed by comparing the physical properties of the resultant compounds with those of the same compounds which had previously been obtained by condensation of cyclopentadiene with buta-

Card 1/3

BUTLEROV, Aleksandr Mikhaylovich [1828-1886]; ANGERT, G.A. [translator]; MOMMA, M. [translator]; SOKOLOVSKIY, A.A. [translator]; VASIL'YEVA, Z.N. [translator]; ALEKSANDROV, L. [translator]; KLADO, T.N. [translator]; PLATE, A.F. [translator], red.; POGODIN, S.A., otv.red.; BYKOV, G.V., red.; RASKIN, N.M., red.; POLYAKOVA, T.V., tekhn.red.

[A.M.Butlerov; his scientific and pedagogical endeavors. A collection of documents] A.M.Butlerov; nauchnaia i pedagogicheskaia deiatel'nost'. Sbornik dokumentov. Moskva, 1961. 416 p. (MIRA 14:3)

1. Akademiya nauk SSSR.
(Butlerov, Aleksandr Mikhailovich, 1828-1886)

PRYANISHNIKOVA, M.A.; DUGACHEVA, G.M.; PLATE, A.F.; ANIKIN, A.G.

Temperatures of crystallization of bicyclo[2.2.1]-2,5-heptadiene, cyclopheptatriene and their mixtures. Dokl.AN SSSR 132 no.4: 857-860 Je '60. (MIRA 13:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk SSSR i Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom B.A.Kazanskim.
(Bicycloheptadiene) (Cycloheptatriene)

PLATE, A F

5.3400,5.1320

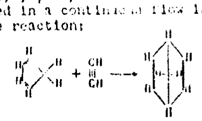
77[illegible]
SOV/80-33-2-34/52

AUTHORS: Bel'kova, N. A., Vol'fson, L. G., Kuznetsova, K. B., Mel'nikov, N. N., Ferson, A. I., Plate, A. F., Pryanishnikova, M. A.

TITLE: Concerning the Isolation of Aldrin and Dieldrin

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 2, pp 454-463 (USSR)

ABSTRACT: The article describes the synthesis of aldrin and dieldrin based on information gathered from foreign patent literature [illegible] the authors' studies of the basic reaction of hexachlorocyclopentadiene with bicyclo-(2,2,1)-heptadiene-2,5. The latter was synthesized in a continuous flow installation, according to the reaction:



Card 1/6

87527

Condensation of Cyclopentadiene With Aliphatic Dienes. II. Interaction of Cyclopentadiene With Isoprene and 2,3-Dimethyl Butadiene-1,3

S/079/60/030/012/010/02?
B001/B064

ASSOCIATION: Institut organicheskoy khimii Akademii nauk SSSR (Institute of Organic Chemistry of the Academy of Sciences USSR)

SUBMITTED: January 14, 1960

Card 3/3

87527

Condensation of Cyclopentadiene With Aliphatic Dienes. II. Interaction of Cyclopentadiene With Isoprene and 2,3-Dimethyl Butadiene-1,3

S/079/60/030/012/010/027
B001/B064

diene plays the more important role under milder conditions, butadiene (or isoprene) under stricter ones. The presence of two double bonds in compound (I) was confirmed by Raman spectra and by selective hydrogenation of isopropenyl bicycloheptene under the addition of one mole hydrogen only (Scheme 3). The structure of the second co-dimer, 5-methyl tetrahydroindene was confirmed by its dehydrogenation to 5-methyl indane (V), with hydrogenation of the latter to 5-methyl hydrindane (VI). 2,3-dimethyl butadiene-1,3 is not condensed with cyclopentadiene at 145-150° in contrast to butadiene and isoprene. Thus, dimethyl butadiene, which has two substituted double bonds proved to be an extremely weakly active dienophilic compound. Under stricter conditions (195-200°C), 5,6-dimethyl-4,9,7,8-tetrahydroindene (VII) (15% yield) resulted from 2,3-dimethyl butadiene-1,3 and cyclopentadiene. The structure of dimethyl tetrahydroindene was confirmed on the basis of its elementary analysis ($C_{11}H_{16}$), its Raman spectra, and physical constants. Its hydrogenation leads to 5,6-dimethyl hydrindane (VIII). The authors thank V. T. Aleksanyan and Kh. Ye. Sterin for the recording of the Raman spectra in the Komissiya po spektroskopii AN SSSR (Commission of Spectroscopy of the AS USSR). There are 3 figures, 2 tables, and 7 references: 3 Soviet, 2 US, 1 German, and 1 British.

Card 2/3

87627
S/079/60/030/012/010/027
B001/B064

15 9201

AUTHORS: Plate, A. F. and Belikova, N. A.

TITLE: Condensation of Cyclopentadiene With Aliphatic Dienes. II. Interaction of Cyclopentadiene With Isoprene and 2,3-Dimethyl Butadiene-1,3

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 12, pp. 3953-3959

TEXT: In continuation of their previous paper (1) the authors investigated the condensation of cyclopentadiene with isoprene and 2,3-dimethyl butadiene-1,3. An experiment based on the data of the American patent (Ref. 2) proved that the cyclopentadiene condensation with isoprene during the first 3.5 months at room temperature gives a yield of only 2% of the final product, isopropenyl bicyclo (2,2,1) heptene-5 (I); the best yield of the latter was 7%, obtained at 140-145°C, with an only inconsiderable amount of the second co-dimer, methyl tetrahydroindene. At higher temperatures (between 185° and 200°C), 5-methyl-4,9,7,8-tetrahydroindene is the principal product (II) (23% yield); only traces of isopropenyl bicycloheptene are formed in this connection. This condensation can therefore be controlled. Cyclopenta-

Card 1/3

87526

Condensation of Cyclopentadiene With Aliphatic Dienes. I. Interaction Between Cyclopentadiene and Butadiene

S/079/60/030/012/003/027
B001/B064

ASSOCIATION: Institut organicheskoy khimii Akademii nauk SSSR (Institute of Organic Chemistry of the Academy of Sciences USSR)

SUBMITTED: January 14, 1960

Card 4/4

tra of 2-vinylbicyclo-(2,2,1)-heptene-) distinctly show the characteristic

87526

Condensation of Cyclopentadiene With Aliphatic S/079/60/030/012/002/027
Dienes. I. Interaction Between Cyclopentadiene B001/B064
and Butadiene

structural elements (bicycloheptene system and the vinyl group). The structure of tetrahydroindene (II) is proved by its hydration under formation of hydrindane (V). Fractional distillation combined with the chromatography of the 15 identical fractions obtained, showed that tetrahydroindene contains no impurities. The different stretching vibrations of the double bond of the Raman spectrum of tetrahydroindene could not be explained. Besides the codimers also high-molecular products are formed during the condensation of cyclopentadiene. Their composition shows that in the reaction with dienes the double bond in the bicyclo-(2,2,1)-heptene structure is more active than the vinyl double bond or the double bond in the six- or seven-membered ring. A table shows the properties of the hydrocarbons obtained in all reactions. The authors thank V. T. Aleksanyan and Kh. Ye. Sterin for taking the Raman spectra at the Komissiya po spektroskopii AN SSSR (Commission of Spectroscopy of AS USSR), and B. A. Rudenko from the authors' institute, for analyses. There are 2 figures, 1 table, and 16 references: 6 Soviet, 4 US, 5 German, and 1 British.

87526

S/079/60/030/012/003/027
B001/B064

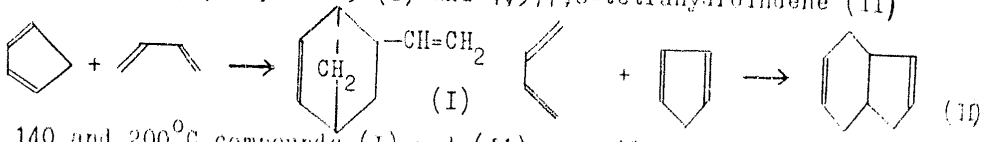
15 9201

AUTHORS: Plate, A. F. and Belikova, N. A.

TITLE: Condensation of Cyclopentadiene With Aliphatic Dienes. I. Interaction Between Cyclopentadiene and Butadiene

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 12, pp. 3945-3953

TEXT: With consideration of the papers of Refs. 1 and 2 and of the US patent of Ref. 3 the authors show that the reaction of cyclopentadiene with butadiene can be used for the synthesis of the two dimers possible, 2-vinylbicyclo-(2,2,1)-heptene-5 (I) and 4,9,7,8-tetrahydroindene (II)



(I) (II)

Between 140 and 200°C compounds (I) and (II) as well as butadienes and cyclopentadiene dimers and reaction products with higher molecular weights are formed. According to the temperature, mainly vinylbicyclo heptene (I) or tetrahydroindene (II) are formed, the former at lower and

Card 1/4

PLATE, A.F., doktor khim.nauk

Rumanian-Soviet conference on problems in the chemistry of hydrocarbons. Vest.AN SSSR 30 no.5:81-82 My '60.
(MIRA 13:5)

(Hydrocarbons)

Oxidation of Olefins With Performic Acid

S/079/60/030/04/45/08[illegible]
B001/B002

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: April 3, 1959

Card 3/3

Oxidation of Olefins With Performic Acid

The ketones are obtained with and without the separation of intermediate products, i.e. single-, and double-stage. 3-ethylpentene-2 and ethylidene-cyclopentane were oxidized with the above acid, and before the separation of the monoformates of the glycols, formic acid and water were distilled off under reduced pressure. The yields of the monoformates of 3-ethyl-pentanediol-2,3 and 1-(1-ethylol)-cyclopentanol-1 were 44.6% and 46%. 3-ethylpentanediol-2,3 and 1-(-ethylol)-cyclopentanol-1 were obtained by the saponification of monoformates. The dehydration of the two compounds with 85% formic acid yielded up to 70% of 3-ethylpentanone-2 and methyl-cyclopentylketone. All ketones obtained, were identified by means of the semicarbazones and 2,4-dinitrophenylhydrazone (Tables 1,2). The advantage of this method is the fact that the oxidation of unsaturated hydrocarbons, and the separations of the ketones, does not meet with experimental difficulties. Ketones are obtained in the pure state and in good yields. The only thing which may be more difficult is the separation of the initial products (unsaturated hydrocarbons). There are 2 tables and 13 references, 5 of which are Soviet.

Card 2/3

S/079/60/030/04/45/080
B001/B002

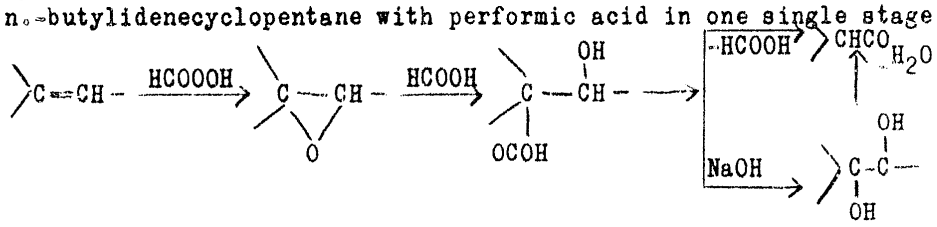
5.3400

AUTHORS: Plate, A. F., Mel'nikov, A. A., Ovezova, A. A.

TITLE: Oxidation of Olefins With Performic Acid

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 4, pp. 1256-1258

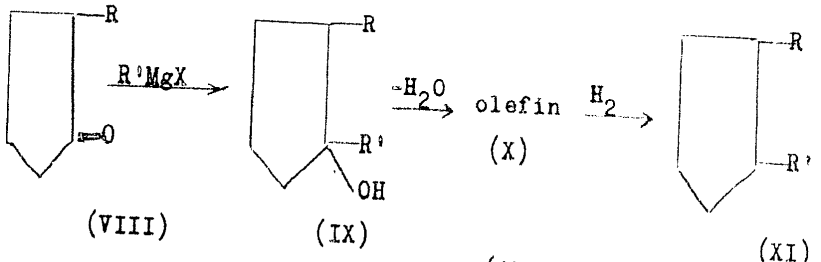
TEXT: The authors used the single-stage synthesis of 2-alkylcyclopentanones-1 by oxidation of 1-alkylcyclopentenes-1 with performic acid (Ref. 1) which they had formerly developed, also for the synthesis of other asymmetrical ketones. 3-ethylpentanone-2 and methyl-, ethyl-, n.-propylcyclopentylketone in yields of 65.2%, 52.7%, 50.2%, 48.8% were obtained by the oxidation of 3-ethylpentene-2 and ethylidene-, n.-propylidene- and n.-butylidenecyclopentane with performic acid in one single stage.



Card 1/3

Oxidation of 1-Phenylcyclopentene-1 With Performic Acid and the Synthesis of 1-Methyl- and 1-Ethyl- 2-phenylcyclopentane

S/079/60/030/04/44/080
B001/B002



(VIII) (IX) (XI)

(the radicals are given).

The constants of the synthesized hydrocarbons are given in Table 2. Under the above conditions the oxidation of 2-phenylcyclopentanone-1 only yielded γ-benzoylbutyric acid. There are 2 tables and 23 references, 9 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: April 3, 1959

Card 3/3

considerable increase in the yield of γ-benzoylbutyric acid (from 8% to 14%). A reduction of the concentration of the initial hydrogen peroxide to 19% (experiment No. 3), and a reduced temperature (23° - 24°) cause a much lower ketone yield (29%). The yield of keto acid remains high, probably due to the further oxidation of the newlydeveloped ketone. Approximately 30% of non-reacting hydrocarbon remains in the reaction mass. Under such comparatively easy conditions, neither glycol and its monoformate, nor the α-oxide were separated. The monoformate of glycol which developed, was converted into 2-phenylcyclopentanone-1 (Scheme 2) in a strongly acid medium (H_2SO_4). In this process, the proton was added to carbinol oxygen under the formation of cation (V), and thence, the tautomeric cation (VI) developed. A decomposition of (VI) also takes place, and formic acid and the carbonium ion (VII) develop. The latter is rearranged into 2-phenylcyclopentanone-1 (VIII a). The newly obtained 1-methyl- and 1-ethyl-2-phenylcyclopentane was synthesized according to scheme 3.

S/079/60/030/04/44/080
B001/B002

53400

AUTHORS: Plate, A. F., Mel'nikov, A. A., Italinskaya, T. A., Zelenko, R. A.

TITLE: Oxidation of 1-Phenylcyclopentene-1 With Performic Acid and the Synthesis of 1-Methyl- and 1-Ethyl-2-phenylcyclopentane

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 4, pp. 1250-1255

TEXT: With reference to the papers of Refs. 1-3, and in continuation of their own papers on the synthesis of some 1,2-dialkylcyclopentanes of the composition C_{10}-C_{13} (Ref. 4), the authors here describe the first two members of 1-alkyl-2-phenylcyclopentane. For obtaining the synthesis of 2-phenylcyclopentanone-1, they examined the oxidation of 1-phenylcyclopentene-1 with performic acid (Refs. 5-7). The monoformate of 1-phenylcyclopentanediol-1,2 (Refs. 5-7) was obtained by oxidation of 1-phenylcyclopentene-1 with performic acid. This oxidation was made by means of 85% performic acid and hydrogen peroxide (Scheme 1). The data given in Table 1 show that the slightest rise in temperature causes a considerable reduction of the 2-phenylcyclopentanone yield (from 66% to 40%), and a

ILLEGIBLE

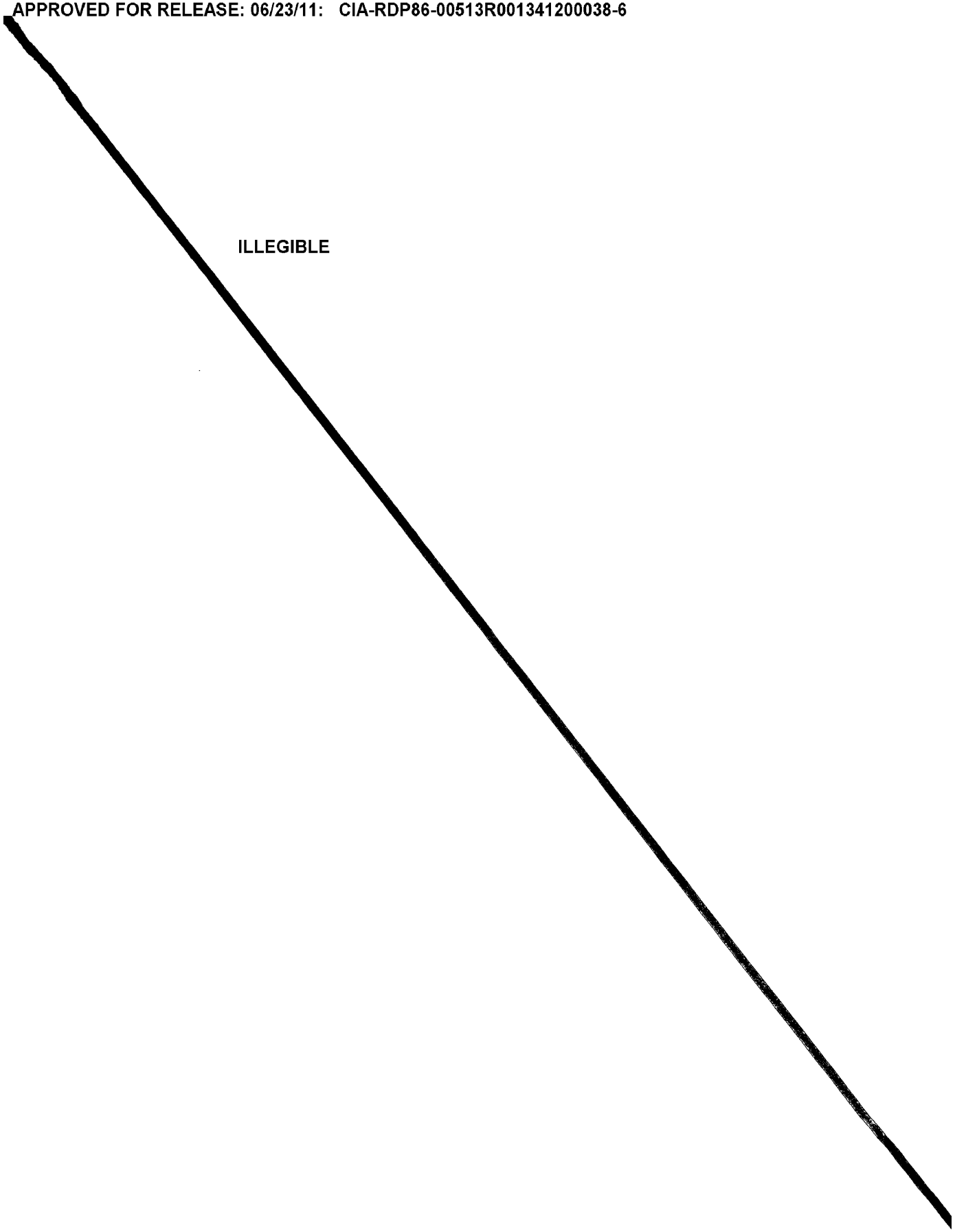


Table 2

1

2	3	4	5	n_D^{20}	d_4^{20}	MR_D 6	MR_D 7	8 C	8 H
2A	0,26	91,8	98° (5) T. пл. 73–74°	-	...	...	...	64,86, 64,80	10,90, 10,8[illegible]
"	1,0	45,3	83–84 (3)	1,4681	1,0770	40,84	40,12	60,61, 60,70	[illegible]
"	0,07	58,0	105–106 (4)	1,4842	1,0880	39,73	[illegible]	66,66, 66,63	11,15, 11,18
"	0,5	52,8	237–238 (7,5)	1,4[illegible]	1,0550	44,94	44,74	62,29, 62,30	9,24, 9,22
"	1,0	98,6	86 (1,5) 120–121 (6)	1,4830	1,0131	44,61	44,61	68,53, 68,51	11,14, 11,2[illegible]
"	0,75	63,9	94– (3)	1,4645	1,0317	49,85	49,36	64,40, 64,52	9,78, 9,92

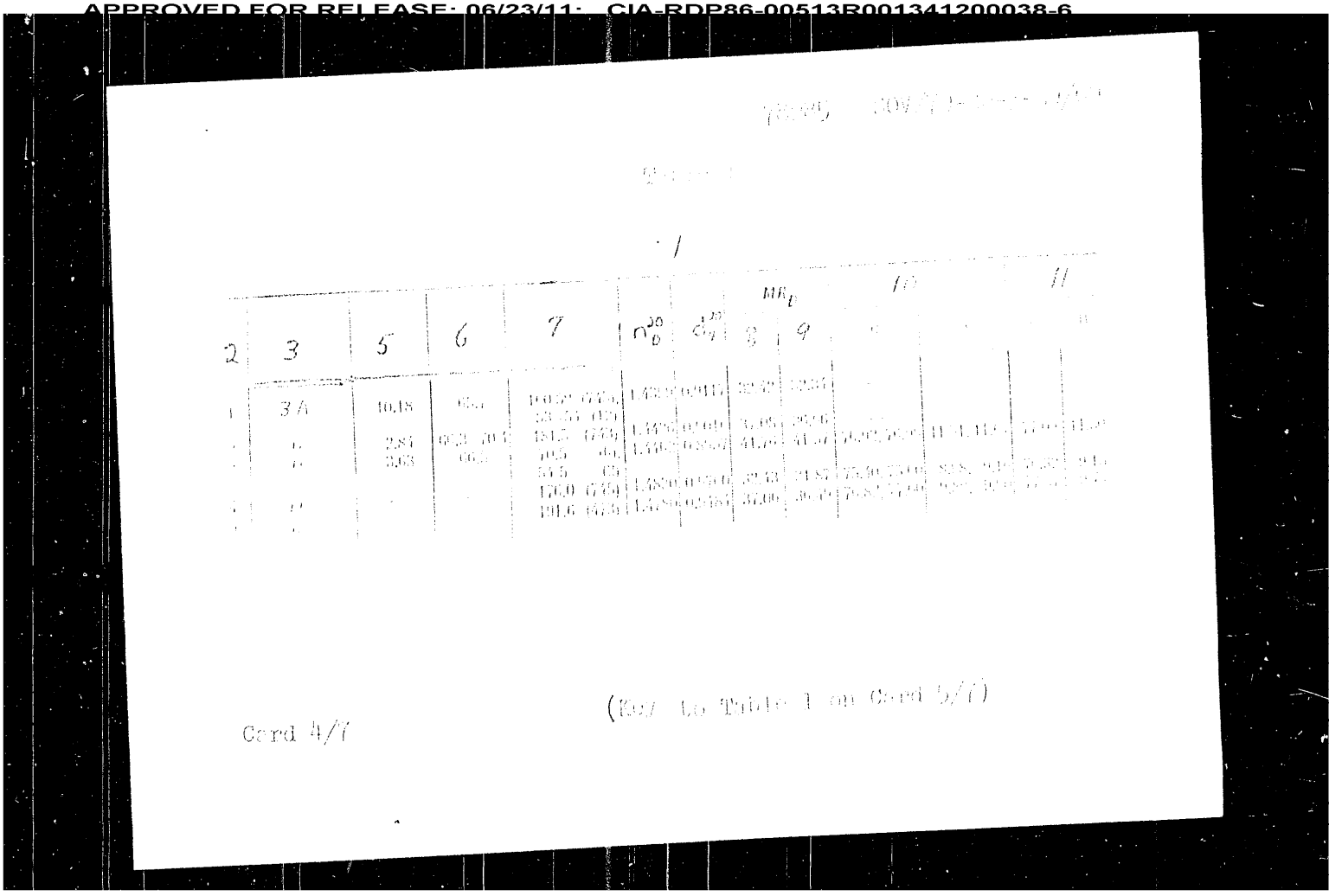
Card 6/7

(Key to Table 2 on Card 7/7)

Oxidation of 1-[illegible]
With Performic Acid [illegible]
Synthesis of 2-[illegible]

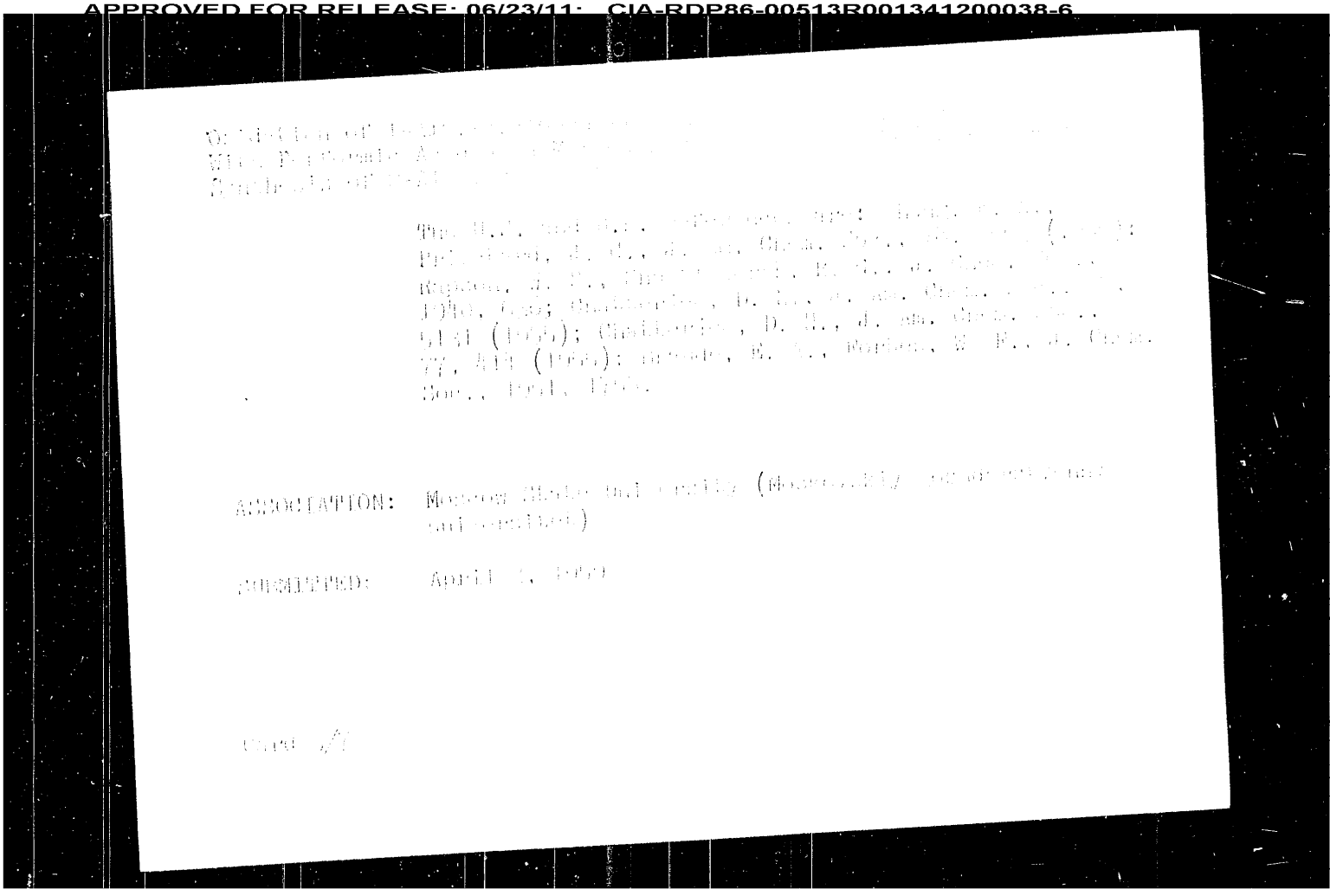
Key to Table 1: (1) Constants of the prepared 2-
-alkylcyclopentan-1-ones and 2-alkylcyclopent-2-one-
-1-ones; (2) Mp; (3) Ketones; (3A) 2-Ethylcyclopentan-
-1-one; 2-n-Propylcyclopentan-1-one; 2-n-Butylcyclopen-
tan-1-one; 2-Ethylcyclopent-2-one-1-one; 2-n-Propylcy-
clopent-2-one-1-one; (5) The amount of oxidized hydro-
carbon (moles); (6) Yield of ketone (%); (7) bp
(pressure, mm); (8) Found: (9) Calculated; (10) Found
(%); (11) Calculated (%).

Card 5/7



(Ref. to Table 1 on Card 5/7)

Card 4/7



ASSOCIATION: Moscow Medical Institute (Moscovskiy meditsinskiy institut)

SUBMITTED: April 5, 1960

Card 1/1

Oxidation of 1-Alkylcyclo[illegible] [illegible] .SOV/[illegible]
With Performic Acid as a Method For
Synthesis of ?-Alkylcyclopenta[illegible]

The main products of the oxidation of [illegible] [illegible] -ene, 1-n-propylcyclopent-1-ene, and 1-[illegible] [illegible] -enes, are [illegible] of corresponding [illegible] [illegible] latter yield ketones when water and formic [illegible] eliminated from the reaction mixture at atmospheric [illegible] The prepared ketones are listed in Table 1. [illegible] oxidation products are eliminated from the [illegible] mixture at low pressure (40-?? mm). The [illegible] [illegible] are glycol monoformates which, on saponification with alkali, yield glycols. Glycols and their [illegible] are shown in Table 2. All compounds [illegible] were prepared for the first time. Oxidation of [illegible]

group, in α-position with respect to double bond, yielded unsaturated cyclic ketones; the [illegible] the double bond results [illegible] (VI). The [illegible]

acids were prepared: [illegible] :

?-hydroxyoctanoic, mp [illegible]; ?-hydroxy[illegible]
There are ? tables; and ?? references, [illegible] [illegible],
3 U.S., 2 U.K., ? French, ? Belgian, 1 Japanese.

Card 2/?

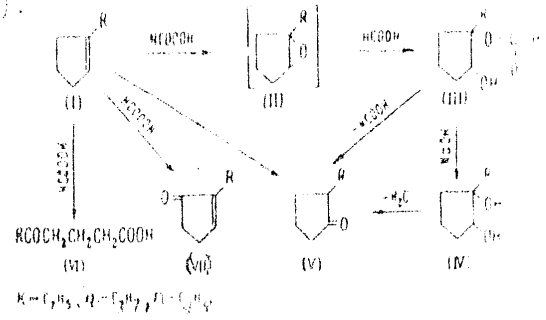
. .

AUTHORS:

TITLE:

PERIODICAL:

ABSTRACT:



Card 1/2

Investigation of the Infrared Absorption Spectra of Dicyclic Hydrocarbons

the absorption coefficient at the band maxima. There are 3 figures, 6 tables and 17 references, 9 of which are Soviet, 4 English, 2 German, 1 mixed (English and German) and 1 from Spectrochimica Acta.

SUBMITTED: July 16, 1959

Card 3/3

S/051/60/008/04/010/032
E201/E691

Investigation of the Infrared Absorption Spectra of Dicyclic Hydrocarbons

calibration beam as well as in the working beam. Table 1 lists the infrared frequencies of all the compounds investigated. The errors in determinations of the frequencies varied between 1 and 2 cm^{-1} depending on the region of the spectrum. Table 1 lists also the estimated absorption intensities using a five-degree scale: very strong, strong, medium, weak, very weak. Fig 1 shows by way of illustration the spectra of dicyclohexyl between 700 and 1500 cm^{-1} and Fig 3 shows the absorption spectra of six hydrocarbons in the ~3000 cm^{-1} region. Tables 2-5 list the measured values of the absorption coefficients of certain selected bands. Table 6 compares the Raman and infrared spectra of some of the compounds studied. For some bands the authors investigated dependence of the integral absorption coefficient and the absorption coefficient at the band maxima on the number of absorbing groups in a molecule. Fig 2 shows that the integral absorption coefficient rises linearly with the number of absorbing CH_2 groups. A similar linear dependence ("additivity") was found for

Card 2/3

S/051/60/008/04/010/032
E201/E691

AUTHORS: Markova, S.V., Bazhulin, P.A., Plate, A.F. and Stanko, V.I.

TITLE: Investigation of the Infrared Absorption Spectra of Dicyclic Hydrocarbons

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 4, pp 492-497 (USSR)

ABSTRACT: The authors investigated the infrared absorption spectra of five-member and six-member dicyclic hydrocarbons in the region from 3 to 24 μ. The majority of the five-member compounds was first prepared in the Laboratory of Catalytic Synthesis of the Institute of Organic Chemistry imeni N.D. Zelinskiy (Ref 1). The results reported in the present paper supplement those on the Raman spectra of the same compounds reported by Markova et al. (Ref 2) and Peregudov et al. (Ref 3). All measurements were made with a double-beam spectrometer, consisting of a standard monochromator IKS-11 and an automatic device developed in the authors' laboratory (Ref 4). In the 3 μ region the compounds were dissolved in CCl_4 (1% concentration) before measurements. In other regions of the spectrum pure compounds were employed. The effects of scattered and reflected light were allowed for by placing a cell with the appropriate compound in the

Card 1/3

69837

S/051/60/008/03/008/038
E201/E191

Raman Spectra of 1,2-dialkylcyclopentane Stereoisomers

respectively) had cis-structure.
There are 1 table and 6 Soviet references.

Card
2/2

SUBMITTED: May 14, 1959

69837

5.3100

S/051/60/008/03/008/018
E201/E191

AUTHORS: Aleksanyan, V.T., Sterin, Kh.Ye., Mel'nikov, A.A. and Plate, A.F.

TITLE: Raman Spectra of 1,2-dialkylcyclopentane Stereoisomers

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 3, pp 324-327 (USSR)

ABSTRACT: The authors investigated the Raman spectra of stereoisomers of three 1,2-dialkylcyclopentanes:
1-ethyl-2-n-propylcyclopentane (I);
1-ethyl-2-n-butylcyclopentane (II);
1,2-di-n-butylcyclopentane (III).
The methods of preparation and recording of the spectra were as described earlier (Ref 3). It was found that the Raman spectra had certain features which could be used to identify reliably the type of the stereoisomer. These features were lines in the regions 1133-1147 cm-1 and 885-910 cm-1 in the spectra of the isomers with lower boiling points, and lines in the regions 1107-1120, 1144-1160 and 882-893 cm-1 in the spectra of the isomers with higher boiling points. The isomers with the lower boiling points (72.9, 91.0 and 122.6 °C for I, II and III

Card 1/2

Polymers and Copolymers With Carbon Chains. XXI. Copolymers on the Basis of Bicyclo (2,2,1) Heptadiene-2,5 and 1,2,3,4,7,7-Hexachloro Bicyclo (2,2,1) Heptadiene-2,5

c1587
S/190/60/00[illegible]
B020/B066

Chemistry imeni N. D. Zelinskiy AN USSR)

SUBMITTED: December 30, 1959

Card 4/4

81587
S/190/60/002/[illegible]
B020/B066

Polymers and Copolymers with Carbon Chains.
XXI. Copolymers on the Basis of Bicyclo
(2,2,1) Heptadiene-2,5 and 1,2,3,4,7,7-
-Hexachloro Bicyclo (2,2,1) Heptadiene-2,5

is much higher than that of bicycloheptadiene. The copolymers obtained contain a total of about 1 per cent of bicycloheptadiene links, which is not sufficient for an increase of the thermal stability of polymethyl methacrylate. The curves of the thermodynamic properties of the copolymers of bicycloheptadiene and styrene, as well as of bicycloheptadiene and vinyl acetate are given in Fig. 2. The latter copolymer was synthesized for the first time. The copolymers of bicycloheptadiene and hexachloro bicycloheptadiene with a molar ratio of 70.5 : 29.5 are well soluble in dichloro ethane and toluene, and are highly elastic at elevated temperatures (250 - 350°). The copolymer of bicycloheptadiene and vinyl acetate is also highly elastic in a wide temperature range (60 - 350°). There are 2 figures, 2 tables, and 6 references: 3 Soviet, 2 US, and 1 British.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy (Institute of Elemental-organic Compounds). Institut organicheskoy khimii im. N. D. Zelinskogo AN SSSR (Institute of Organic

Card 3/4

S/190/60/002/009/[illegible]
B020/B060

Polymers and Copolymers With Carbon Chains. XXI. Copolymers on the Basis of Bicyclo (2,2,1) Heptadiene-2,5 and 1,2,3,4,7,7-Hexachloro Bicyclo (2,2,1) Heptadiene-2,5

bicyclopentadiene and other monomers (styrene, vinyl acetate, methyl methacrylate) was studied to clarify the influence of the copolymer composition upon their solubility and thermodynamic properties. The authors synthesized copolymers from equimolecular quantities of dissolved bicycloheptadiene and hexachloro bicycloheptadiene in the presence of BF_3 (2 mole%) and in bulk in the presence of benzoyl peroxide and tri-n-propyl boron (0.5 mole%). The results obtained are given in Table 1. The curves of the thermodynamic properties of the copolymers of bicycloheptadiene and hexachloro bicycloheptadiene are presented in Fig. 1. According to an X-ray structural analysis, the resultant copolymers are amorphous. The properties of copolymers from equimolecular quantities of bicycloheptadiene and styrene are also given (Table 2). The results of the copolymerization of equimolecular quantities of bicycloheptadiene with methyl methacrylate in bulk in the presence of azoisobutyric acid dinitrile, benzoyl peroxide, and tert-butyl peroxide showed that the activity of methyl methacrylate

Plate, A. F.

S/190/60/[illegible]
B020/B066

5.3831

AUTHORS: Kolesnikov, G. S., Suprun, A. P., Soboleva, T. A., Plate, A. F., Slonimskiy, G. L., Pryanishnikova, M. A., Tarasova, G. A.

TITLE: Polymers and Copolymers With Carbon Chains. XXI. Copolymerization on the Basis of Bicyclo (2,2,1) Heptadiene-2,5 and 1,2,3,4,7,7-Hexachloro Bicyclo (2,2,1) Heptadiene-2,5

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 3, pp. 451-455

TEXT: The authors attempted the polymerization of dissolved bicycloheptadiene and hexachloro bicycloheptadiene in the presence of BF_3 and the polymerization of hexachloro bicycloheptadiene in the presence of benzoyl peroxide, tert-butyl peroxide, azoisobutyric acid dinitrile, tri-n-propyl boron, and $TiCl_4$. Hexachloro bicycloheptadiene does not form polymers (Ref. 4). Bicycloheptadiene (Ref. 5) forms polymers in methylene chloride in the presence of BF_3 (at -70^0, 4 hours) in a 75% yield. The copolymerization of bicycloheptadiene with hexachloro

Card 1/4

The Problem of Producing Cycloheptatriene

B/062/60/000/[illegible]
B013/B052

SUBMITTED: August 8, 1959

Card 3/3

The Problem of Producing Cyclic [illegible]

to react. The effect of acetylene pressure on thermal isomerization of bicyclo-(2,2,1)-heptadiene-2,5 was studied in the same equipment at 397°C. Experiments without acetylene were conducted for comparison. Results are given in Fig. 3 and Table 2. It was shown that acetylene pressure reduces the decomposition of bicyclo-(2,2,1)-heptadiene into cyclopentadiene and acetylene, and gives higher cycloheptatriene yields. At 397°C, a pressure increase from atmospheric pressure to 7.2 atm increased the cycloheptatriene yield from 34.8% to 53.9% referred to bicycloheptadiene. The contact time is another important factor influencing the cycloheptatriene yield. The yield increases with increasing contact time. During thermal isomerization of bicycloheptadiene, resinification is negligible; it is at most 0.1% at acetylene pressure, and even less at atmospheric pressure. There are 6 figures, 5 tables, and 9 references: 5 Soviet

ASSOCIATION: Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N.D. Zelinskiy of the Academy of Sciences USSR)

Card 2/3

S/062/60/000/012/[illegible]
B013/B054

AUTHORS: Pryanishnikova, M. A., Milyutinskaya, Yu. M., and Plate, A. F.

TITLE: The Problem of Producing Cycloheptatriene

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. [illegible], pp. [illegible]

TEXT: The authors studied the possibility of producing cycloheptatriene from cyclopentadiene and acetylene in one step without separating the intermediate bicycloheptadiene. The experiments were conducted in a continuous system (Fig. 4) at temperatures of 390-415°C and pressures of 5-7 atm. It was found that a temperature increase raises the yield in cycloheptatriene, but reduces that in bicycloheptadiene. At higher pressure, a better result is obtained at lower temperatures. 30% of cycloheptatriene, besides 20-25% of bicyclo-(2,2,1)-heptadiene, are formed at 400-405°C and 7 atm acetylene pressure. The yield also depends on the rate of supply of cyclopentadiene (Fig. 5). At a slower supply rate (12 ml/h instead of 23 ml/h), the cycloheptatriene yield rises from 15 to 22%. At very fast supply rates, cyclopentadiene has not sufficient time

Card 1/3

Hydrogenation of DL(Δ^{2} [illegible])... S/062/60/000/005/034/033/XX
acetylene on Pd... Pt... and Ni Catalysts B013/B055

on the catalyst mainly at the triple bond. Yu. S. Zal'kind, S. V. Lebedev, M. S. Platonov, B. A. Kazanskiy, M. Yu. Lukina, A. I. Malyshev, I. V. Gostunskaya, N. B. Dobroserdova, V. N. Ipat'yev, N. D. Zelinskiy are mentioned. The authors thank V. T. Aleksanyan and Kh. Ye. Sterin of the laboratoriya Komissii po spektroskopii AN SSSR (Laboratory of the Commission for Spectroscopy AS USSR) and M. M. Sushchinskiy of the Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Physics Institute imeni P. N. Lebedev AS USSR) for carrying out the spectroscopic analyses of catalyzates. There are 1 figure, 1 table, and 23 references: 14 Soviet, 4 French, 3 US, 1 British, and 1 German.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR
(Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: March 7, 1959

Card 3/3

Hydrogenation of Di-(Δ^2-cyclopentenyl) acetylene on Pd-, Pt-, and Ni Catalysts

S/062/60/000/008/024/033/XX
B013/B055

Pt, di-(Δ^2-cyclopentenyl)-acetylene adds three moles of H_2, forming 1,2-dicyclopentyl ethylene, the double bonds in the five-membered rings being preferentially hydrogenated. Owing to the isomerizing effect of the Pd catalyst, the reaction product obtained after the addition of three H_2 molecules to di-(Δ^2-cyclopentenyl)-acetylene over Pd is a mixture of unsaturated hydrocarbons. This mixture consists primarily of 1,2-dicyclopentyl ethylene and 1-(Δ^1-cyclopentenyl)-cyclopentyl ethane. The preferential addition of hydrogen to the double bonds in the five-membered ring as compared to double bonds in open chains was demonstrated by partial (50%) hydrogenation of an equimolar mixture of 3-methyl 1-cyclopentene and 2-octene over Pt black. In the presence of Rainey Ni, hydrogen is at first absorbed at a constant rate. After absorption of two H_2 molecules, the hydrogenation rate gradually decreases. Fractional distillation of the catalyzate showed that the mixture contained none of the components in major quantities. The mixture had a wide boiling range and was not further examined. This investigation allows the conclusion that in a molecule, the presence of double bonds in the five-membered rings adjacent to the triple bond does not prevent the selective hydrogenation of this triple bond over Pd. In this case, too, the molecule is probably adsorbed

Card 2/3

S/062/60/000/008/024/033/XX
B013/B055

AUTHORS: Plate, A. F. and Stanko, V. I.

TITLE: Hydrogenation of Di-(Δ^2-cyclopentenyl)-acetylene on Pd-, Pt-, and Ni Catalysts

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 8, pp. 1481-1489

TEXT: The present paper treats the hydrogenation of a compound containing a double bond in each of two five membered rings and a triple bond between the rings, i.e., di-(Δ^2-cyclopentenyl)-acetylene (I) in the presence of various catalysts. Partially selective addition of hydrogen would mainly yield a hydrocarbon with three isolated double bonds. The study was undertaken to clarify the mechanism of its hydrogenation. Di-(Δ^2-cyclopentenyl)-acetylene was prepared by reaction of the Iotsich complex with Δ^2-cyclopentenyl chloride (Ref. 18). Hydrogenation was carried out at room temperature and atmospheric pressure, a fresh catalyst being used for each experiment. It was found that over Pd, the triple bond in di-(Δ^2-cyclopentenyl)-acetylene is selectively hydrogenated to a double bond. On

Card 1/3

with the chemists of the USSR. Success was achieved in the Rumanian People's Republic in the chemical utilization of methane and the production of acetylene, the hydrates of which are obtained according to the method by Kucherov. A. B. Nalbandyan reported on the oxidizing mechanism of hydrocarbons at low temperatures and A. N. Bashkirov on the utilization of liquid hydrocarbons. V. Vîntu, M. Popescu, and S. Bali reported on the development of the classic reaction by Shorygin. The following Rumanian scientists are mentioned next: I. Shneyder, I. Tudornu, I. Gejan, I. Oprescu, I. Drimus, K. Metase, M. Klange, K. Cristescu, and I. Nicolescu. Among Rumanian institutes, the "Khimgaz" Institute at Mediaş, the "Petrokhim" Institute at Ploesti, the Institute of Petroleum, Gases and Geology in Bucharest, as well as the Polytechnic Institute and the University in Bucharest are mentioned.